DOCUMENT RESUME

ED 422 304 SP 038 096

AUTHOR Geary, William T.
TITLE From Dependence toward Independence via Interdependence.
PUB DATE 1998-04-13
NOTE 22p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Diego, CA, April 13-17, 1998).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classroom Techniques; *Cooperative Learning; Elementary Education; Elementary School Students; Elementary School Teachers; Faculty Development; Inservice Teacher Education; *Self Control; *Student Behavior; Teacher Attitudes; Teacher Behavior; Teaching Methods

ABSTRACT

This ethnographic study examined conditions affecting how six elementary teachers who were involved in an ongoing inservice program embraced, comprehended, and applied elements of classroom management via cooperative learning. The study described factors that helped and hindered their attempts. Data collection included site visits with observations, questionnaires, individual interviews, and focus group discussions. The study lasted for 1 year, with data collected before, during, and after staff development sessions that helped them implement cooperative learning. Data analysis indicated that teacher beliefs and practices changed, but relatively little. The participants believed in cooperative learning before the study began. As the year progressed, they used it more often, were more confident in their practices, and were clearer about which teaching method and relevant classroom management techniques to use at any given time. Teachers' beliefs, more than theories, affected their choices regarding grouping of students, pedagogy, and classroom management. At times, teachers made choices about handling student behavior that seemingly contradicted what they were trying to do in terms of supporting student growth toward greater independence. The paper defines several relevant terms (cooperative learning, peer tutoring, cooperative structures, and collaborative learning), explaining how they help students become independent. It also examines levels of independence; different purposes and applications of cooperative learning; power, equality, and cooperation; critical thinking; and three essentials of cooperative learning. (Contains approximately 123 references.) (SM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 422 304

From Dependence Toward Independence Via Interdependence

William T. Geary

Co-Coordinator, Maui Outreach Programs

Teacher Education and Curriculum Studies Department

College of Education, University of Hawaii at Manoa

Mail: University of Hawaii Center, Maui.

310 Kaahumanu Ave., Kahului, HI 96732

Voice: (808) 984-3525

Fax: (808) 984-3201

E-mail: gearyw@hawaii.edu

Paper presented at the annual meeting of the

American Educational Research Association

San Diego, CA

April, 1998

SP038096

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

W. Geary

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Purpose and Objectives

This paper investigates the conditions affecting how and to what degree teachers who are involved in an ongoing inservice program embrace, comprehend, and apply elements of cooperative learning. The form of research is an ethnographic case study of six teachers in a metropolitan public elementary school who are working toward incorporating cooperative learning into their everyday classroom practices. The goal of the study is to identify and describe factors that help and hinder their attempts.

The school reflects the diversity of urban America. There are new immigrants and others whose families have several generations of citizens. Many are permanent residents of the community, while over half are military dependents whose families usually live nearby only one to three years. In working with a population of whites, blacks, various Asian ethnicities, and others, the teachers' challenge is to successfully integrate all, both academically and socially.

Most research on cooperative learning focuses on the students. This one emphasizes the change and growth of teachers in their search to improve their ability to support the students progress toward greater independence via interdependence. The study poses three questions:

1. How do teacher beliefs and practices change?
2. Which theories of cooperative learning emerge as being important, and how do they affect teacher beliefs and practices?
3. What are the relationships among teachers' theories, beliefs, and practices?

Review of the Literature

Different authors' works discuss both relevant theoretical bases and different methods best used with certain educational purposes in mind. These ideas give some insight regarding why and how to implement certain practices.

Three major rationales support cooperative learning: learning theory, democracy, and preparation for careers and life. Vygotsky (1978) discusses the ability of an individual to improve by collaborating with more capable peers. Piaget (1932) feels that certain types of knowledge, such as social-arbitrary, can only be developed through interaction with others. Constructivist cognitive psychology, as cited by the Sharans (1992) in Israel and Goodman (1991) in Arizona, also supports the value of social interaction in helping people expand their language base to interpret reality and build understanding, as does social interdependence theory (Johnson & Johnson, 1994). Several different authors argue that democracy is both supported by and a basis for cooperative learning. Francis Parker (1883, 1937), John Dewey (1916), John Goodlad (1994) and others conclude that social interaction is a critical element of democracy. Jeanne Gibbs (1994) and Spencer Kagan (1992) both conclude that cooperative learning and democracy must be integrated with each other. Dewey (1915) and Goodlad (1984), among many others, state that school should prepare students for careers and life. They cite the importance of school as a model of society in helping them become responsible citizens, the need to prepare them for team efforts in the workplace, and the need to interact with others throughout their lives.

The different types of cooperative learning may be understood in terms of teachers' educational goals. Different structures support higher level thinking activities more than others, while some provide more equal democratic interaction. Research shows cooperative learning useful in supporting academic gains, improving social interaction, developing racial integration, and increasing self-esteem. In studying different authors' methods, one may place each one's emphasis on a continuum from dependent to independent. Highly structured methods, in which the teacher makes the decisions regarding who does what, when, and how, are more appropriate for students and classes who are younger or more dependent upon others. For students who are older, experienced with cooperative learning, or

otherwise more self-sufficient, teachers may delegate more authority and responsibility for decision-making to the group, using a less structured format for such independent students. The teacher assesses the needs and strengths, then uses the appropriate structure to support the goals suggested by the assessment.

Methodology

This is a multiple case study of six teachers in the same elementary school, with two second-grade teachers, and one each in grades three, four, five, and six. The study uses evidence from a variety of data-gathering methods, including site visits with observations, questionnaires, many individual interviews, and a few focus group discussions. The study lasted for one school year, with data collected before, during, and after the staff development sessions designed to help them implement cooperative learning. It includes teacher self-report data, plus observations from the author and two others who visited the teachers' classrooms. The various methods, length of the study, and use of multiple observers are used as checks on accuracy of the data.

There are limitations. Case studies can be subject, at least in part, to the researcher's selective subjectivity. Self-report data may involve the same such concerns. The use of triangulation, with multiple methods and researchers over a full academic year, may help mitigate the effects of any bias.

Data Analysis

Evidence from the data is used to describe changes in teacher beliefs and practices, relevant applications of theory, and how theory impacts specific aspects of teacher beliefs and practices.

Overview

Teacher beliefs and practices changed, but as might be expected. The six involved were volunteers; they already believed in cooperative learning. As the year progressed, they used cooperative learning more often, were more confident in their practices, and clearer about which teaching method to use at any given time.

Regarding theory, few such constructs appeared, nor was there was much apparent influence on the teachers' beliefs and/or practices. With respect to the influence of learning theory, only one of the six teachers voluntarily named Vygotsky as an influence. None of the others mentioned any other developmental theorists, constructivists, or social interdependence advocates. Democratic practices were sometimes evident, but democracy was not stated as a conscious goal, though this was not asked about directly by the researchers. All of the teachers used career and life preparation as a basis for having students learn cooperatively. But the teachers spoke in terms of their beliefs, not from theory-driven models. For the six teachers it was their beliefs, not theories, that drove their practices.

In the classroom, it was mainly teacher beliefs, though also a little theoretical influence, that affected their choices regarding grouping of students, pedagogy, and classroom management. As the staff development emphasis was mostly concerned with the first two of these, at times some of the teachers made choices regarding how to handle student behavior that seemed to contradict what they were trying to do in terms of supporting student growth toward greater independence. Their beliefs influenced their practices more than theories did, but they were not aware of the inconsistency between choices of pedagogy versus choices of classroom management, nor that this conflict sometimes undermined goals in each.

Definitions

Cooperative learning. This may include any type of instruction in which a student works in unison with one or more others. It is not to be confused with cooperative education, which may refer to combining jobs and study in an internship fashion. I choose to use cooperative learning as the overall category and consider other types of peer interaction as subheadings, for several reasons: (1) within the body of professional literature, references to cooperative learning are significantly more common than any other term; (2) educational conferences and organizations use this expression more frequently than other; (3) the most influential international advocates of students working together use the phrase in the broadest sense; (4) alternate choices, such as peer tutoring and collaborative learning, refer to a more specific type of partner or group interaction than does cooperative learning.

Peer tutoring. Often just referred to as tutoring, this involves two or more students working together, often for purposes of review or drill, in which one acts as the tutor and helps the other(s). The teacher usually decides both the objective and the process of working together, and the students just do as they are told.

Cooperative structures. These methods involve two or more students working together for a common purpose. The teacher has a variety of choices whether or not to delegate any decision-making on either the goal or the way the team will work together. More dependent students may be given a small objective and assigned specific roles with clear tasks to help work progress smoothly. More experienced students may be given a choice of objectives, and allowed to choose who will assume the different jobs needed to complete the whole project.

Collaborative learning. Also referred to as peer collaboration, this is used as a synonym for cooperative learning by some (Kohn, 1993), perhaps because the dictionary definitions of cooperative and collaborative are similar. But within

education, I feed that collaborative structures are better understood as the cooperative processes in which the group is highly independent. The students assume most or complete responsibility for deciding objectives and the methods of reaching them on their own. They are capable of acting independently; the teacher serves as a guide or resource. This level is closest to the ideal goal of self-sufficiency for each student, via cooperative learning.

Levels of Independence

I have found that one way to differentiate among the various structures is to think of them as enabling students to progress from dependent toward independent as the students move toward eventually accepting adult responsibilities. Highly structured methods would be used when the students are newer to cooperative learning, younger, and/or more dependent. Gradually, within a school year, or from kindergarten through high school, the educator may delegate more authority and responsibility to the students. At first, the teacher often decides what the topic will be, and which process will be used. There may be detailed steps in the implementation, with students guided carefully along the way. Eventually the students are given more choice regarding the goal, the process used to achieve it, and the roles of each of the members.

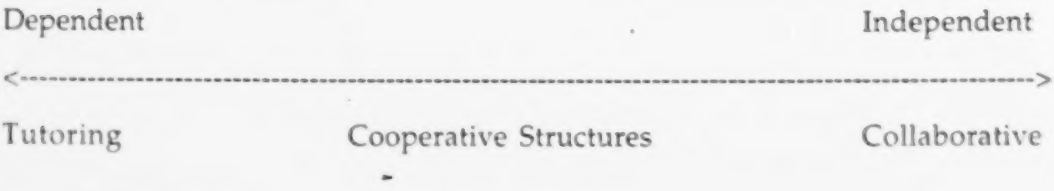

Figure 1. Level of Student Independence (in most cases)

Different Purposes and Applications

Most cooperative structures, such as those from Slavin (1990), Bayer (1990), Kagan (1992), the Sharans (1992), and the Johnsons (1994), are for general use, and best classified along the independence continuum. But different structures may also be considered for their applications toward other purposes, such as the review or drill possible with tutoring, or higher level thinking, as with Lyman's "Think-Pair-Share" (McTighe & Lyman, 1988), or Aronson's "Jigsaw" (Aronson, et. al., 1978).

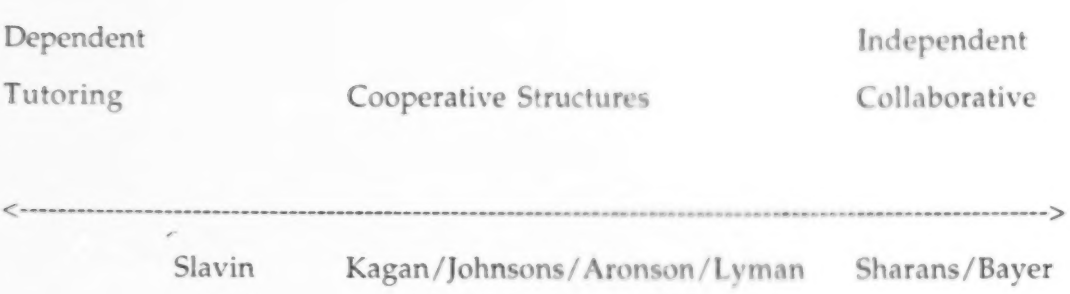

Figure 2. Comparison of Authors' Methods

Power, Equality, and Cooperation

Damon and Phelps (1989) analyzed three different types of interaction: peer tutoring, cooperative structures, and peer collaboration. One purpose was to study the level of equality among the participants. Did the group members participate equally, sharing power and leadership, or were there differences? Peer tutoring was understandably low in equality, with the person assuming the role of teacher doing most of the leading. Cooperative structures and collaborative structures were both high in equality, for each member usually shared some of the leadership and power

(pp. 9-19). High equality is desired because it indicates a high level of capability among all members.

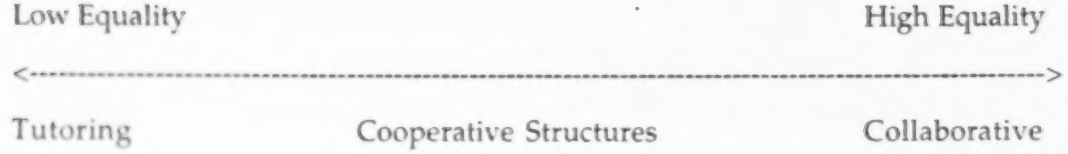

Figure 3. Equality of Interaction (between or among members)

Critical Thinking

In their same study, Damon and Phelps also assessed the level of thinking that took place within the three types of groups. They used the term "mutuality" to refer to the depth of learning. Peer tutoring and cooperative structures varied in mutuality, for it depended on the process chosen or type of structure used. For example, review of a vocabulary list or practice with a set of math facts would indicate low mutuality, and could occur within either a tutoring or cooperative situation. But collaboration usually rated high on mutuality, for it was more likely to be used with problem-solving or acquiring conceptual insight.

This generalization is not absolute. The use of Aronson's "Jigsaw" or Lyman's "Think-Pair-Share" in either tutoring or highly structured cooperative learning situations could still generate a high level of mutuality among the participants.

Jigsaw/Think-Pair-Share/Jigsaw II

Low Mutuality — High Mutuality

<----------->

Tutoring — Cooperative Structures — Collaborative

Figure 4. Mutuality (level of thinking/learning)

Three Essentials of Cooperative Learning

Based on both a review of the literature and my own research, I view cooperative learning as a combination of three key components: the creation of a positive learning environment to reduce fear and encourage risk, the development of social skills to facilitate interaction, and the use of a structure to give and/or delegate procedural guidance.

When a positive learning environment is established through classbuilding and teambuilding activities, students trust enough to risk and feel supported by their peers. Then social skills need to be assessed, for no student is a void, as one teacher in the study points out: "Certain students already have social skills they've learned from their families, so the instruction is redundant." If needed, they should be taught, either separately or more naturally integrated within a relevant lesson. For some classes, such as one staying intact as it moves up a grade, readiness may be immediate. With others, the teacher may wish to take a long time to build up trust among students who have been shown little elsewhere. But when both a positive learning environment and appropriate social skills exist, the students are ready to work with one another more autonomously than ever before. This order of instruction is demonstrated by the following diagram:

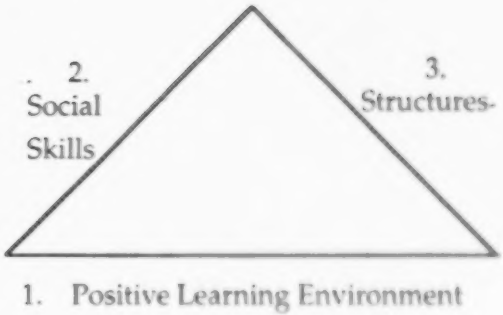

Figure 5. Components of Cooperative Learning: Order of Instruction

Conclusions

Several conclusions follow from the research. They include an order of elements for teaching cooperative learning, as well as a general conclusion regarding guiding students toward greater self-sufficiency. Other results pertain to the relative lack of influence of theories on the teachers.

Educators should assess the climate of their classroom first, building a positive learning environment and teaching necessary social skills before and/or concurrently with any cooperative learning methods. By addressing needs in this order, students are more likely to trust one another, and more able to interact effectively in groups.

Students mature, ideally becoming fully independent as adults. During the course of an academic year, each teacher serves as a guide for each student, helping each one take another step toward the ability to "fly solo". Relevance for this with respect to cooperative learning means that the teacher should gradually delegate more authority and responsibility to the groups. With younger students, or those with less cooperative learning experience, the teacher is more likely to make all decisions regarding who will do what, when, and how, in each group. As the year

progresses, or with older students, the teacher should delegate more of the decisions regarding roles, processes, and timeline. Lack of theoretical cohesion means that the teacher sometimes seems to send an unconscious mixed message to the students, and isn't clear about what to delegate.

Educational Importance

The study has relevance for any educators interested in effectively pursuing the use of cooperative structures, both as an effective means of teaching, and as an end in itself, supporting the future productive interaction of members in society. While this research included only elementary school teachers, both secondary teachers and university professors have found classroom applications useful. Testing such generalizations more formally is a possible future research project.

The practical significance of the research lies in the guidance it offers educators on how to use theory to guide practice, work consistently toward goals, and solve problems. Learning theory will remain most useful in guiding instructional decisions, democracy offers some direction regarding some curriculum and some instruction, and the concept of career and life preparation may serve as an umbrella, offering guidance for all educational decisions. Clarity among priorities can help support greater consistent development.

Note: These references are from a larger work used as a basis for the AERA papers. The complete dissertation reference is printed at the end of the last page. -Bill Geary

REFERENCES

Adams, D. & Hamm, M. (1990). Cooperative learning: critical thinking and collaboration across the curriculum. Springfield, IL: Charles C. Thomas.

American Heritage College Dictionary (1993). (3rd ed.) Boston: Houghton Mifflin.

Aronson, E., Blaney, N., Stephan, C., Sikes, J., & Snapp, M. (1978). The jigsaw classroom. Beverly Hills, CA: Sage.

Bayer, A. (1990). Collaborative-apprenticeship learning: language and thinking across the curriculum, K-12. Mountain View, CA: Mayfield Publishing.

Bean, R. (1992). Cooperation, social responsibility, & other skills: using the four conditions of self-esteem in elementary and middle schools. Santa Cruz, CA: ETR Associates.

Berg, K. F. (1992). Structured cooperative learning and achievement in a high school mathematics class. (Doctoral dissertation, University of Hawaii, 1992).

Bogdan, R. C., & Biklen, S. K. (1982). Qualitative research for education. Boston: Allyn and Bacon.

Bransford, J. D., & Vye, N. J. (1989). A perspective on cognitive research and its implications for instruction. In Resnick, L. B., & Klopfer, L. E. (Eds.), Toward the Thinking Curriculum: Current Cognitive Research. Alexandria, VA: Association for Supervision and Curriculum Development.

Bruner, J., & Haste, H. (Eds.). (1987). Making sense: the child's construction of the world. New York: Methuen.

Burns, M. (1992). About teaching mathematics: a K-8 resource. Sausalito, CA: Math Solutions Publications.

Burns, M. (1990). The math solution: using groups of four. In N. Davidson (Ed.), Cooperative Learning in Mathematics: A Handbook for Teachers. New York: Addison Wesley.

Cloward, R. (1967). Studies in tutoring. Journal of Experimental Education, 36, 14-25.

Cohen, E. G. (1986). Designing groupwork: strategies for the heterogeneous classroom. New York: Teachers College Press.

Cook, S. W. (1978). Interpersonal and attitudinal outcomes in cooperating interracial groups. Journal of Research and Development in Education, 12(1), 97-113.

Courtis, S. A., McSwain, E. T., & Morrison, N. C. (1937). Teachers and cooperation. Washington, DC: National Education Association.

Cummings, C. (1990). Managing a cooperative classroom. Edmonds, WA: Teaching, Inc.

Damon, W., & Phelps, E. (1989). Critical distinctions among three approaches to peer education. International Journal of Educational Research, 13, 9-19.

Daresh, J., & LaPlant, J. (1984, April). The statue of research on administrator inservice. In Achilles, C., Epstein, M., Egelson, P., Dockery-Runkel, L., & Dickerson, C. (1992). Practical School Improvement: the Mary Reynolds Babcock Project. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Davidson, N. (Ed.). (1990). Cooperative learning in mathematics: a handbook for teachers. Menlo Park, CA: Addison Wesley.

Deutsch, M. (1949). A theory of cooperation and competition. Human Relations, 2, 129-152.

DeVries, D. L., & Edwards, K. J. (1973). Learning games and student teams: their effects on the classroom process. American Educational Research Journal, 10, 307-318.

DeVries, D., Slavin, R. E., Fennessey, G. M., Edwards, K. J., & Lombardo, M. M. (1980). Teams-games-tournament: the team learning approach. Englewood Cliffs, NJ: Educational Technology Publications.

Dewey, J. (1915). The school and society (Rev. ed.). Chicago: University of Chicago Press.

Dewey, J. (1916). Democracy and education: an introduction to the philosophy of education. New York: Macmillan.

Dillon-Peterson, B. (1986). Trusting teachers to know what's good for them. In Zumwalt, K. K., Improving Teaching. Alexandria, VA: Association for Supervision and Curriculum Development.

Educational Research Service. (1990). What we know about cooperative learning. Arlington, VA: author.

Elbow, P. (1981). Writing with power: techniques for mastering the writing process. New York: Oxford University Press.

Farivar, S. H., & Webb, N. M. (1994). Are your students prepared for group work? Middle School Journal, 25(3), 51-54.

Fullan, M., & Hargreaves, A. (1992). Teacher development and educational change. Bristol, PA: Falmer.

Fuhrman, S., Elmore, R., & Massell, D. (1993). School reform in the United States: putting it into context. In S. L. Jacobson and R. Berne (Eds.), Reforming education: the emerging systemic approach. Thousand Oaks, CA: Corwin.

Gibbs, J. (1994). Tribes: a new way of learning together. Santa Rosa, CA: Center Source Publications.

Glasser, W. (1986). Control theory in the classroom. New York: Harper & Row.

Goodlad, J. I. (1994). Educational renewal: better teachers, better schools. San Francisco: Jossey-Bass.

Goodlad, J. I. (1984). A place called school. New York: McGraw-Hill.

Goodman, J. , Kuzmic, J., & Wu, X. (1992). Elementary schooling for critical democracy. Albany, NY: State University of New York Press.

Goodman, K. S., Bird, L. B., & Goodman, Y. M. (Eds.) (1991). The whole language catalog. Santa Rosa, CA: American School Publishers.

Goodman, K. S., Goodman, Y. M., & Hood, W. J. (Eds.). (1989). The whole language evaluation book. Portsmouth, NH: Heinemann Educational Books.

Graves, D. H. (1983). Writing: teachers and children at work. Exeter, NH: Heinemann Educational Books.

Greene, J. D., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. Educational Evaluation and Policy Analysis, 11(3), 255-274.

Guba, E. G., & Lincoln, Y. S. (1981). Effective evaluation. San Francisco: Jossey-Bass.

Haines, D. B., & McKeachie. (1967). Cooperative versus competitive discussion methods in teaching introductory psychology. Journal of Educational Psychology, 58, 386-390.

Hanson, E. M. (1991) Educational administration and organizational behavior. (3rd ed.) Boston: Allyn and Bacon.

Harste, J. C., & Short, K. G. (1988). Creating classrooms for authors. Portsmouth, NH: Heinemann.

Harris, B. M. (1989). In-service education for staff development. Boston: Allyn and Bacon.

Hertz-Lazarowitz, R. (1993). Using group investigation to enhance Arab-Jewish relationships. Cooperative Learning, 11(2), 13-14.

Hickcox, E., & Musella, D. (1992). In Fullan, M. & Hargreaves, A. (Eds.), Teacher development and educational change. Bristol, PA: Falmer.

Huberman M., & Miles, M. (1984). Innovation up close. New York: Plenum.

Hull, G. A. (1989). Building an understanding of composing. In Resnick, L. B., & Klopfer, L. E. (Eds.), Toward the Thinking Curriculum: Current Cognitive Research. Alexandria, VA: Association for Supervision and Curriculum Development.

Johnson, B. (1992, April). Documentation and evaluation of school restructuring: dilemmas of a new paradigm. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Johnson, D. W., & Johnson, R. T. (1994). Learning together and alone: cooperative, competitive, and individualistic learning. (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Johnson, D. W., & Johnson, R. T. (1989). Leading the cooperative school. Edina, MN: Interaction Book Co.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1994). The new circles of learning: cooperation in the classroom and school. Alexandria, VA: Association for Supervision and Curriculum Development.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1988). Advanced cooperative learning. Edina, MN: Interaction Book Co.

Joyce, B., Murphy, C., Showers, B., & Murphy, J. (1989). School renewal as cultural change. Educational Leadership, 47(3), 70-78.

Joyce, B., & Showers, B. (1995). Student achievement through staff development. (2nd ed.) New York: Longman.

Kagan, S. (1992). Cooperative learning. San Juan Capistrano, CA: Kagan Cooperative Learning.

Kagan, S. (1990). The structural approach to cooperative learning. Educational Leadership, 47(4), 12-15.

Kagan, S. (1988). Cooperative learning resources for teachers. Riverside, CA: University of California.

Kincheloe, J. (1991). Teachers as researchers: qualitative inquiry as a path to empowerment. Bristol, PA: The Falmer Press.

Knapp, N., & Peterson, P. (1991). What does CGI mean to you? Teachers' ideas of a research-based intervention four years later. East Lansing, MI: Michigan State University.

Kohn, A. (1993). Punished by rewards: the trouble with gold stars, incentive plans, A's, praise, and other bribes. Boston: Houghton Mifflin.

Kohn, A. (1992). No contest: the case against competition. (Rev. ed.) Boston: Houghton Mifflin.

Kohn, A. (1990). The brighter side of human nature: altruism and empathy in everyday life. New York: Basic Books.

Kouzes, J. M., & Posner, B. Z. (1987). The leadership challenge: how to get things done in organizations. San Francisco, Jossey-Bass.

Krueger, R. A. (1994). Focus groups: a practical guide for applied research. (2nd ed.) Thousand Oaks, CA: Sage.

Lickona, T. (1991). Educating for character. New York: Bantam.

Lieberman, A. (1991). Early lessons in restructuring schools. New York: Columbia University.

Lippitt, P. & Lohman, J. (1965). Cross-age relationships - an educational resource. Children, 12, 113-117.

Lyman, L, & Foyle, H. C. (1990). Cooperative grouping for interactive learning. Washington, DC: National Education Association.

Lyman, L, Foyle, H. C., & Azwell, T. S. (1993). Cooperative learning in the elementary classroom. Washington, DC: National Education Association.

Maller, J. B. (1929). Cooperation and competition: an experimental study in motivation. New York: Teachers College, Columbia University.

May, M. A., & Doob, L. W. (1937). Cooperation and competition. New York: Social Science Research Council.

McTighe, J., & Lyman, F. T. Jr. (1988). Critical thinking in the classroom: the promise of theory-embedded tools. Educational Leadership, 45(7), 18-24.

Mead, M. (Ed.). (1937). Cooperation and competition among primitive peoples. New York: McGraw-Hill.

Mead, M. (Ed.). (1961). Cooperation and competition among primitive peoples. (Rev. ed.) Boston: Beacon.

Moorman, C., & Dishon, D. (1983). Our classroom: we can learn together. Englewood Cliffs, NJ: Prentice-Hall.

Morgan, G. (1991). Images of organization. Newbury Park, CA: Sage.

Newkirk, T. & McLure, P. (1992). Listening in: children talk about books (and other things). Portsmouth, NH: Heinemann.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In Newmann, F. M. (Ed.), Student engagement and achievement in American elementary schools. New York: Teachers College Press.

O'Brien, J. (1993). An extension of the concept of triangulation from data collection to data analysis in a qualitative study of successful kindergarten teachers. (Doctoral dissertation, University of Hawaii, 1993).

Orlich, D. C. (1989). Staff development: enhancing human potential. Boston: Allyn and Bacon.

Parker, F. W. (1937). Talks on pedagogics: an outline of the theory of concentration. New York: John Day.

Parker, F. W. (1883). Notes of talks on teaching. New York: E. L. Kellogg.

Paul, R. W. (1995). Critical thinking: how to prepare students for a rapidly changing world. Santa Rosa, CA: Foundation for Critical Thinking.

Patton, M. Q. (1990). Qualitative evaluation and research methods (2nd ed.). Beverly Hills, CA: Sage.

Pepitone, E. A. (1980). Major trends in research on competition and cooperation, 1897-1980. In E. A. Pepitone (Ed.), Children in Cooperation and Competition. Lexington, MA: D. C. Heath.

Phillips, B. N., & D'Amico, L. A. (1956). Effects of cooperation and competition on the cohesiveness of small face-to-face groups. Journal of Educational Psychology, 47, 65-70.

Piaget, J. (1932). The language and thought of the child. (2nd ed.) New York: Harcourt Brace.

Pink, W., & Hyde, A. (1992). Effective staff development for school change. Norwood, NJ: Ablex.

Resnick, L. B. & Klopfer, L. E. (1989). Toward the thinking curriculum: an overview. In Resnick, L. B. & Klopfer, L. E. (Eds.), Toward the Thinking Curriculum: Current Cognitive Research. Alexandria, VA: Association for Supervision and Curriculum Development.

Rodriguez, S., & Johnstone, K. (1986). Staff development through a collegial support group model. In Zumwalt, K. K., Improving Teaching. Alexandria, VA: Association for Supervision and Curriculum Development.

Ruddock, J., & Hopkins, D. (1985). Research as a basis for teaching: readings from the work of Lawrence Stenhouse. London: Heinemann Educational Books.

Sapon-Shevin, M., & Schniedewind, N. Cooperative learning as empowering pedagogy. In Sleeter, C. E. (Ed.). (1991). Empowerment through multicultural education. Albany, NY: State University of New York Press.

Sharan, S., (Ed.). (1994). Handbook of cooperative learning methods. Westport, CN: Greenwood Press.

Sharan, Y., & Sharan, S. (1992). Expanding cooperative learning through group investigation. New York: Teachers College Press.

Slavin, R. E. (1991). Synthesis of research on cooperative learning. Educational Leadership, 48(5), 71-82.

Slavin, R. E. (1990). Cooperative learning: theory, research and practice. Englewood Cliffs, NJ: Prentice Hall.

Slavin, R. E. (Ed.) (1989). School and classroom organization. Hillsdale, NJ: Lawrence Erlbaum Associates.

Slavin, R. E. (1980). Using student team learning. (Rev. ed.) Baltimore, MD: The Center for Social Organization of Schools, Johns Hopkins University.

Slavin, R. E., Madden, N., Karweit, N. Dolan, L., Wasik, B. (1992). Success for all: a relentless approach to prevention and early intervention in elementary schools. Arlington, VA: Educational Research Service.

Sleeter, C. E. (Ed.) (1991). Empowerment through multicultural education. Albany, NY: State University of New York Press.

Spaulding, R. (1970). Educational improvement program. Durham, NC: Duke University Press.

Stake, R. E. (1978). The case study method in social inquiry. Educational Researcher, 7(2), 5-8.

Stake, R. E. (1988). Case study methods in educational research: Seeking sweet water. In R. M. Jaeger (Ed.), Complementary methods for research in education (pp. 253-265). New York: American Educational Research Association.

Stallings, J. (1989). School achievements effects and staff development: what are some critical factors? Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Strauss, A. L. (1987). Qualitative analysis for social scientists. New York: Cambridge.

Stendler, C., Damrin, D., & Haines, A. C. (1951). Studies in cooperation and competition: 1. The effects of working for group and individual rewards on the social climate of children's groups. Journal of Genetic Psychology, 79, 173-197.

Stewart, D. W., & Shamdasani, P. N. (1990). Focus groups: theory and practice. Newbury Park, CA: Sage.

Tharp, R. G. (1989). Psychocultural variables and constants: effects on teaching and learning in the schools. American Psychologist, 44(2), 349-359.

Tobin, J. (1995). Youth development project: a text for teachers. Honolulu, HI: University of Hawaii, Manoa.

Tobin, J., Jacobs, A., Marker, N., Kimura, C. (1993). Youth development project in the schools: a course of study. Honolulu, HI: University of Hawaii, Manoa.

Tobin, J., Wu, D., & Davidson, D. (1989). Preschool in three cultures. New Haven, CN: Yale University Press.

Totten, S., Sills, T., Digby, A., & Russ,. P. (1991). Cooperative learning: a guide to research. New York: Garland.

Valencia, S. W., & Killion, J. P. (1988). Overcoming obstacles to teacher change: direction from school-based efforts. Journal of Staff Development: 9(2), 2-8.

Vygotsky, L. S. (1978). Mind in society. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Webb, N. M. (1989). Peer interaction and learning in small groups: a research summary. International Journal of Educational Research, 13(1), 21-39.

Webb, N. M. (1984). Stability of small group interaction and achievement over time. Journal of Educational Psychology, 76(2), 211-224.

Webb, N. M. (1982). Peer interaction and learning in cooperative small groups. Journal of Educational Psychology, 74(5), 642-655.

Weigel, R. H., & Cook, S. W. (1975). Participation in decision-making: a determinant of interpersonal attraction in cooperating interracial groups. International Journal of Group Tensions, 5(4), 179-195.

Weigel, R. H., Wiser, P. L., & Cook, S. W. (1975). The impact of cooperative learning experiences on cross ethnic relations and attitudes. Journal of Social Issues, 31(1), 219-244.

White, M. (1987). The Japanese educational challenge: a commitment to children. New York: Free Press.

Yin, R. K. (1981). The case study crisis: some answers. Administrative Science Quarterly, 26, 58-65.

Yin, R. K. (1989). Case study research: Designs and methods (Rev. ed.). Newbury Park, CA: Sage.